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Cross-Cultural Analysis of Gender Gap in Entrepreneurship

Giorgia Salis

Martin Flegl

La Salle University, Mexico City, Mexico

ABSTRACT

Women entrepreneurs have progressively gained more space in what is mostly a man-dominated business world. However, a considerable gender gap in the likelihood of starting a business venture still exists in most countries in the world. Such gap can vary depending on the country and on its socio-cultural, legal and economic conditions among others. In this paper, Hofstede's cultural dimensions and the Human Development Index of 55 countries are tested in order to identify what factors have a positive effect on the gender gap. Results indicate that the most influential factor is the Human Development index, meaning that the more developed a country is, the lower the gender gap in the entrepreneurship is. In addition, the results also indicate that a lower level of gender gap is also observed in rather individualistic, pragmatic and risk-adverse cultures.

KEYWORDS

female entrepreneurship, gender gap, Human Development Index, individualism, masculinity, socio-cultural environment

Introduction

In the past decades, female entrepreneurship has been object of public consideration and academic research across the globe, as it has progressively gained more space in what is a mainly man-dominated field (Global Entrepreneurship Monitor, 2017). In fact, female entrepreneurs have proved

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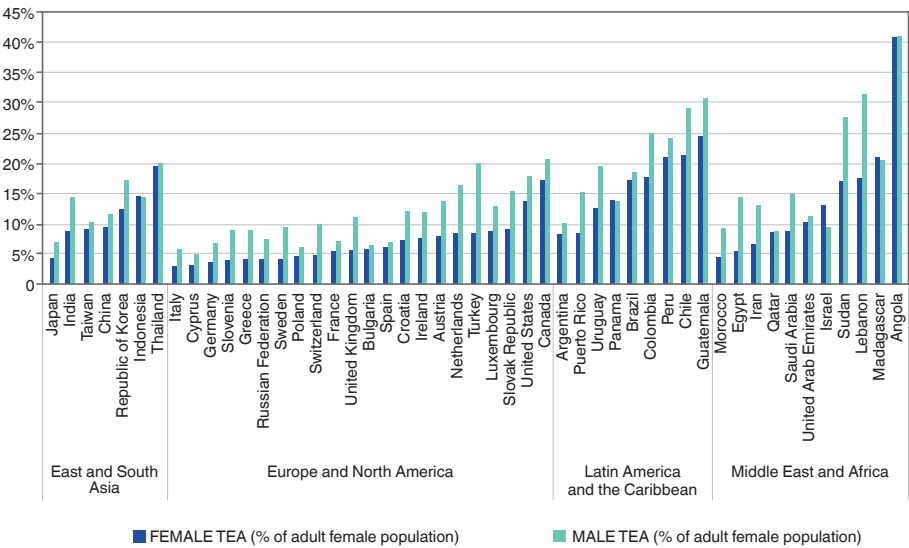
giorgia.salis@hotmail.it

martin.flegl@hotmail.com

themselves to be crucial for the countries’ socio-economic growth (Bosse & Taylor, 2012), bringing added value to the overall life quality of societies due to their tendency of spending more than men on family needs, e.g. household health, nutrition and education (Nichter & Goldmark, 2009). In addition, through their participation in such business activity, women manage to improve their own status by emancipating themselves from the ascribed roles of masculine-oriented societies (Datta & Gailey, 2012; Treviño et al., 2018).

However, despite the statistically acknowledged importance of women’s entrepreneurial action for the economy and for the society (Brush & Cooper, 2012), a significant gender gap in the likelihood of starting a business venture still exists in most countries (Hughes et al., 2012). As the Global Entrepreneurship Monitor’s report shows (Global Entrepreneurship Monitor, 2019a), of 48 countries surveyed (including all 4 regions of the world, i.e. East and South Asia, Europe and North America, Latin America and the Caribbean, Middle East and Africa), only six countries show equal rates by gender of Total early-stage Entrepreneurial Activity (TEA) (Figure 1). Two of them are found in the East and South Asia region (Indonesia and Thailand), one is in Latin America (Panama) and three are in the Middle East and Africa region (Qatar, Madagascar and Angola). As for the Europe and North America region, many economies lack gender equality. In fact, in six countries in this region, women start at less than half the TEA rate of men (Slovenia, Greece, Sweden, Switzerland, United Kingdom, and Turkey) and no country shows equal levels between genders.

Figure 1
Total Early-Stage Entrepreneurial Activity (TEA) Rates by Gender among Adults (ages 18–64) in 48 Economies, in Four Geographic Regions (Global Entrepreneurship Monitor, 2019a)



Source: Global Entrepreneurship Monitor Adult Population Survey, 2018

As proven by these data, gender gap in early-stage entrepreneurship activity is more prominent in developed countries than in the developing ones. This is traditionally explained by the fact that in developing economies women face higher difficulty in entering the formal labour market and, therefore, have to turn to entrepreneurship as a way out of unemployment or poverty (Minniti & Naudé, 2010). However, there are several kinds of drivers determining such phenomenon due to its multifaceted nature (Welter, 2011). In fact, these may include both contextual factors such as economic, regulatory and socio-cultural conditions (Ahl, 2006; Estrin & Mickiewicz, 2011), as well as individual ones, such as personality traits (Malach-Pines & Schwartz, 2008), whereby the former ones show a more solid scientific support than the latter ones. Consequently, Dheer, Li and Treviño (2019) stressed the importance of adopting an integrative approach to the analysis in order to have a more comprehensive understanding of the issue. On top of that, it is important to consider that gender gap in the likelihood of starting a business venture varies at different levels, i.e. at the intra-national and national (or international) level (Dheer, Lenartowicz, & Peterson, 2015). As for the first level, this is due to inherent cultural and economic differences that might exist within the same country, whereas for the second level, as previously explained, the reason of possible variations lies in specific contextual and individual factors affecting different nations.

Hofstede's six-dimensional model (Hofstede, 1980; Hofstede, 1991; Hofstede, 2003) offers the possibility to analyse gender gap in entrepreneurship on a cultural and international level. In fact, Hofstede theorizes that a national culture consists of six dimensions: Power Distance, Individualism vs. Collectivism, Masculinity vs. Femininity, Uncertainty Avoidance, Long-Term vs. Short-Term Normative Orientation, Indulgence vs. Restraint. These cultural dimensions "represent independent preferences for one state of affairs over another that distinguish countries (rather than individuals) from each other" (Hofstede, n.d.-a). In this regard, Rubio-Bañón and Esteban-Lloret (2016) analysed the entrepreneurial gender gap in 55 countries from various regions of the world and, using Hofstede's model, assumed that countries with a higher level of Masculinity would result in having a higher level of gender entrepreneurial breach, as one might commonly believe. The authors divided the countries in groups depending on their level of Masculinity (i.e. high, medium-high, medium-low and low) and their state of development was also considered. According to their results, no group of countries analysed showed a clear link between the level of Masculinity and the rate of gender gap in entrepreneurship, as some rather feminine countries (e.g., Norway) showed a higher gap in entrepreneurship than the masculine ones and vice versa. Cardozo Crowe (2010) also confirms this result by stating that in rather masculine countries women might engage in entrepreneurial projects more easily than in countries with more feminine cultures. That is because the former ones are impregnated over such masculine values as achievement, heroism, assertiveness and material rewards for success, while the latter ones will rather value cooperation, modesty, caring for the weak and quality of life, which are indeed classified as feminine values (Hofstede, 2001; Hofstede, Hofstede & Minkov, 2010).

As a continuation of the above-mentioned research works, this paper aims to deepen the analysis of the issue at the same levels (i.e., cultural and international) in order to investigate whether a combination of more variables might effectively influence gender gap in the likelihood of starting business ventures.

Materials and Methods

Sample and data

As already mentioned in the previous paragraph, the objective of this paper is to deepen the research work that was carried out by Rubio-Bañón and Esteban-Lloret (2016) by attempting to find out what variables and/or mix of variables affect gender gap in entrepreneurship. For this reason, the unit of analysis is the same geographical units as the above-mentioned paper, i.e. 55 countries from all regions of the world (East and South Asia, Europe and North America, Latin America and the Caribbean, Middle East) excluding Africa.

For what concerns gender gap¹ (i.e. the *dependent variable* of the analysis), data were collected from *Global Entrepreneurship Monitor 2019 Entrepreneurial Behaviour and Attitudes* report (Global Entrepreneurship Monitor, 2019b), whereby the majority of data is from 2018, while for the missing countries, data were retrieved from reports of previous years down to 2013. In particular, in the GEM report the calculation for determining gender gap is defined as Total early-stage Entrepreneurial Activity (TEA) Rates by Gender, “which is the percentage of female 18–64 population who are either a nascent entrepreneur or owner-manager of a new business, divided by the equivalent percentage for their male counterparts”². GEM’s team generates the above-mentioned data through a tool called Adult Population Survey (APS), which is given to approximately 2,000 randomly selected adults, and which “looks at the characteristics, motivations and ambitions of individuals starting businesses, as well as social attitudes towards entrepreneurship” (Global Entrepreneurship Monitor, 2019b).

As for the *independent variables*, as opposed to Rubio-Bañón and Esteban-Lloret (2016), all of Hofstede’s six cultural dimensions were taken into consideration this time (Hofstede, 2001; Hofstede, Hofstede & Minkov, 2010), i.e., Individualism vs. Collectivism (IDV), Power Distance (PDI), Uncertainty Avoidance (UAI), Long-Term vs. Short-Term Normative Orientation (LTO), Indulgence vs. Restraint (IVR), Masculinity vs. Femininity (MAS):

- In *individualist* cultures, people are expected to take care of only themselves and their immediate families, as opposed to *collectivist* cultures, where people

¹ For convenience, the “gender gap in entrepreneurship” variable will sometimes be referred to as simply “gender gap” throughout the paper.

² Early-stage entrepreneurial activity means that the activity is centred on the period preceding and immediately after the actual start of a firm. In Global Entrepreneurship Monitor, the moment of start-up is defined by generating the first income from the sales of products or services. This early stage includes the phases of (i) nascent entrepreneurship when an entrepreneur is actively involved in setting up a business, and (ii) new business ownership, owning and managing a business in existence up to 42 months (Global Entrepreneurship Monitor, 2019a).

expect relatives or members of a particular ingroup to look after them in exchange for unquestioning loyalty;

- *Power Distance* has to do with the way a society handles inequalities among people. This means that a society with a high degree of PDI will accept a hierarchical order in which everybody has a place, and which does not need further justification. On the contrary, a low degree of PDI means that people demand justification for inequalities and strive for equal distribution of power;
- *Uncertainty Avoidance* is related to the way a society deals with risks about the future, thus a higher degree of UAI means that a society feels uncomfortable with uncertainty and ambiguity and has rigid codes of belief and behaviour. On the contrary, societies with a low degree of UAI have a more relaxed attitude and give more importance to practice than principles. In other words, the former kind of society tries to control the future while the latter rather lets it happen;
- *Long-Term Orientation* has to do with the tendency of a society of accepting societal change that diverges with time-honoured traditions and norms, therefore societies that score low in this dimension see societal change with suspicion and vice versa. In the business context, societies that score high might also be defined as *pragmatic* (long term) and societies scoring low would be considered *normative* (short term) as the former ones encourage modernity and the latter are rather traditionalist;
- A society is *indulgent* when it allows gratification of basic and natural human drives related to enjoying life and having fun, while a *restrained* society suppresses gratification of needs and has strict social norms;
- *Masculine* cultures are generally considered “tough” and more competitive than the *feminine* ones, standing for such values as achievement, heroism, assertiveness and material rewards for success. On the other hand, rather *feminine* cultures are seen as more “tender”, standing for cooperation, modesty, caring for the weak and quality of life.

For each cultural dimension, a country has a score that ranges from 0 to 100, whereby a score is considered LOW to INTERMEDIATE when it is below 50 and HIGH when it is above 50. In order to develop this cultural framework, Professor Geert Hofstede initially analysed data from a large database of employee value scores collected within IBM between 1967 and 1973. Then he replicated and extended the research on different international populations and by different scholars, until the last edition of his book in 2010, which includes an analysis on 76 countries. Despite the long distance of time, the scores can be considered up to date as cultures change very slowly (Hofstede, n.d.-b).

The last *independent variable* used in the analysis is the Human Development Index (HDI)³ created by the United Nations (2018a), which indicates the level of

³ “The HDI simplifies and captures only part of what human development entails. It does not reflect on inequalities, poverty, human security, empowerment, etc.”. For more details, refer to <http://hdr.undp.org/en/content/human-development-index-hdi>

development of a country (i.e., very high, high, medium, low) from both a human and an economic perspective. In fact, this Index comprises three dimensions:

1. *Long and healthy life*, measured by the rate of life expectancy at birth;
2. *Knowledge*, measured by the number of years of schooling for adults aged at least 25 and by expected years of schooling for children of school-entering age;
3. *Decent standard of living*, measured by Gross National Income (GNI) per capita.

As data for certain countries (i.e., Czech Republic, Guatemala, Israel, Jamaica, Panama, Suriname) were missing with respect to the Long-Term Orientation (LTO) and the Indulgence (IVR) dimensions, the *correlation coefficient* was calculated for the above-mentioned countries by considering the rest of Hofstede's dimensions and by comparing them with those of the countries that had complete data. The cut-off level was 0.70 as from this level up there is considered to be strong correlation between the units analysed. As a final step, an average from those countries was calculated to assign the missing data. Furthermore, as the HDI for Taiwan and Vietnam was missing as well, it was retrieved from other similar sources. For the former, the HDI taken into consideration is the one calculated by Taiwan's government (based on 2010 new methodology of UNDP) as the UN itself does not recognize Taiwan as a sovereign state⁴; as for the latter, the Index was retrieved from the UN's Human Development Report of 2018, which includes data up until 2017 (United Nations, 2018b).

Methodology and hypotheses

The methodology adopted is of econometric kind. A basic econometric representation can be expressed as follows:

$$W_i = a_0 + a_1Y_{1i} + a_2Y_{2i} + \dots + a_kY_{ki} + U_i, \quad (1)$$

where W_i is a dependent variable, $Y_{1i}, Y_{2i}, \dots, Y_{ki}$ are the observed explicatory (independent) variables, i is an index referring to number of observations, and U_i is disturbance variable with a normal distribution with mean 0 and constant variance, so (Gujarati, 2004). Hence, for the purpose of this research work, W_i is gender gap in entrepreneurship and $Y_{1i}, Y_{2i}, \dots, Y_{ki}$ are Hofstede's dimensions and HDI. The estimation of the effects of each independent variable and of their combination is based on simple and multiple linear regression. All data were first collected in an Excel file and then transferred to the software Stata/SE 11.0 in order to run the estimations.

As basis for the estimations, the following hypotheses were formulated with respect to the seven independent variables taken into consideration:

H1: A higher level of Individualism makes gender gap in entrepreneurship decrease

In individualist societies people's self-image is defined in terms of "I" and not "we" (Hofstede, n.d.-a), meaning that social consensus does not particularly affect one's self-perceived image. Thus, gender gap might be positively influenced

⁴ For more details, refer to <https://www.nytimes.com/2018/09/21/world/asia/taiwan-united-nations-joseph-wu.html>

by it in the sense that more women might be willing to follow their own ideas and determination and therefore start a business venture, without feeling restrained by the limits of a society in terms of entrepreneurial initiative, for example Davis and Williamson (2019).

H2: A lower level of Power Distance does not necessarily make gender gap in entrepreneurship decrease

Considering that people living in societies with a low degree of PDI demand justification for inequalities and strive for equal distribution of power, one might think that a low level of this variable should correspond to a lower rate of gender gap in entrepreneurship as women might be driven by that kind of innovative mindset. In reality, Kusterer (2014) and OECD (2016a) argue the opposite, as in the most egalitarian countries of the world, such as Iceland and countries belonging to the Scandinavian region (OECD, 2016b), there is still a considerable gender gap in the business area for what concerns women holding top corporate positions and their condition in starting entrepreneurial ventures.

H3: A high level of Uncertainty Avoidance makes gender gap in entrepreneurship decrease

As discussed by Bosse and Taylor (2012), the increased presence of women in the entrepreneurial field has a positive effect on the socio-economic growth of a country. For this reason, societies with a high degree of UAI might be open to more women entering the business world in leading positions, as they would be seen as a possibility of growth for the country, which would therefore minimize such risks as social decadence and economic stagnation.

H4: A higher level of Long-Term Orientation makes gender gap in entrepreneurship decrease

Societies with a high score of LTO are open to societal change and value a pragmatic approach to life and business, meaning that they do not blindly stick to time-honoured traditions and norms. This could mean that they are more open to women gaining power in social status by undertaking entrepreneurial initiatives.

H5: A higher level of Indulgence makes gender gap in entrepreneurship decrease

Similarly to the previous variable, indulgent societies do not have strict social norms and value personal gratification. For this reason, these kinds of societies could be open as well to women gaining power in society by starting business ventures.

H6: A high level of Masculinity does not necessarily correspond to high gender gap in entrepreneurship

H7: A country's level of development is not relevant in affecting gender gap in entrepreneurship

As proven by Rubio-Bañón and Esteban-Lloret (2016), the levels of *Masculinity* and of *development of a country* do not seem to be relevant when looking at the

gender gap in entrepreneurship in different countries. However, they will be taken into consideration to see whether a combination of them with other variables from Hofstede might make a difference in the analysis.

Results

Among all estimations, a total of 27 models have been taken into consideration. First of all, Table 1 shows a one-to-one comparison of variables, meaning that each independent variable was taken singularly in order to assess which one(s) were relevant in affecting the dependent variable.

In this case, the results show that Power Distance (PDI), Individualism (IDV), Human Development (HDI) and Long-Term Orientation (LTO) are the relevant influential factors affecting gender gap in entrepreneurship, with a level of confidence of 99% (***) for the former three and of 95% (**) for the latter. In particular, Power Distance (Model 1) has negative impact on the gender gap as the higher the PDI is, the higher the gender gap is. This result goes along with the Power Distance definition stating that societies with a high degree of PDI accept a hierarchical order in which everybody has a place, and which does not need further justification. Vice versa, in societies with a low degree of PDI people demand justification for inequalities and strive for equal distribution of power. Similarly, the obtained result for Long-Term Orientation (Model 5) confirms the assumption that societies with high score in LTO are open to societal change. In fact, the result indicates that the higher the Long-Term Orientation is, the lower the gender gap in entrepreneurship is (constant -0.002), i.e., these societies are open for equal representation of gender in entrepreneurship. Furthermore, the result for Individualism (Model 2) confirms the assumption that individualistic societies show lower levels of gender gap (constant -0.004), meaning that IDV has a positive effect on gender gap. Lastly, as opposed to the expectations, the level of development of a country, i.e., HDI (Model 7), turned out to be relevant in affecting gender gap. In particular, it has a positive effect as the constant is negative (-1.377) meaning that the higher the HDI is, the lower the gender gap in entrepreneurship is (as observed with IDV and LTO). In more technical terms, it means that if HDI increases by 1, gender gap decreases by .934.

However, the basic comparison does not capture the complexity of the matter and it would be wrong to make final conclusions over the stated hypotheses. Therefore, it was necessary to use the multilevel linear regression. Results of the multilinear regressions are shown in Table 2, whereby the Models focus on combinations of variables where the main variables taken into consideration are the relevant ones shown in Table 1.

In Model 8, all variables were considered together and, as most of them turned out to be irrelevant, this model has no significance. Only Human Development Index is significant on the confidence level of 90% (*). In this case, the effect of HDI is the same as in the previous one-to-one analysis (Model 7 in Table 1) where it is also relevant and negative. In Model 9, all variables but HDI were considered in order to see whether the absence of it affected the relevance of the other variables. In fact,

without HDI, Individualism and Uncertainty Avoidance are relevant, where the former has a confidence level of 95% and the latter of 90%. In addition, both are negative as in Table 1, therefore they have a positive effect on the gender gap. However, this Model cannot be considered significant as only two variables out of six are relevant.

Table 1
Basic Comparison of Variables

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant	.477 (.000)***	.883 (.000)***	.639 (.000)***	.783 (.606)	.828 (.000)***	.610 (.000)***	1.845 (.000)***
PDI	.003 (.009)***	–	–	–	–	–	–
IDV	–	-.004 (.000)***	–	–	–	–	–
MAS	–	–	.001 (.453)	–	–	–	–
UAI	–	–	–	-.001 (.284)	–	–	–
LTO	–	–	–	–	-.002 (.040)**	–	–
IVR	–	–	–	–	–	.001 (.271)	–
HDI	–	–	–	–	–	–	-1.377 (.000)***
R-squared	.121	.220	.010	.021	.077	.022	.283

Note. * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$

Table 2
Multilevel Linear Regression

Variables	Model 8	Model 9	Model 10	Model 11	Model 12
Constant	1.597 (.000)***	.936 (.000)***	.743 (.000)***	1.679 (.000)***	1.930 (.000)***
PDI	.000 (.940)	.001 (.368)	.004 (.002)**	.001 (.406)	–
IDV	-.002 (.135)	-.003 (.019)**	–	–	–
MAS	.000 (.571)	.000 (.453)	–	–	–
UAI	-.001 (.139)	-.002 (.052)*	-.002 (.051)*	-.001 (.114)	-.001 (.156)
LTO	-.000 (.679)	-.002 (.145)	-.002 (.018)**	-.001 (.174)	-.001 (.235)
IVR	.001 (.325)	.000 (.763)	–	–	–
HDI	-.934 (.057)*	–	–	-1.035 (.018)**	-1.273 (.000)***
R-squared	.390	.340	.255		.326

Note. * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$

In Model 10, only three variables that turned out to be relevant in previous models were taken into consideration, i.e., PDI, UAI and LTO. This Model is significant as all variables are statistically significant, with a confidence level of 95% and 90%. Similarly to the basic one-to-one estimations, Power Distance keeps its positive impact on the gender gap (the effect is even stronger in the multilinear regression: .004 vs. .003), as well as the Long-Term Orientation (with the same level). For what concerns Uncertainty Avoidance, results show that the higher the level of UAI, the lower the gender gap (constant $-.002$), which confirms the assumption that the more risk and uncertainty adverse a society is about the future, the lower gender gap in entrepreneurship is. What is more, when HDI was added into this estimation (Model 11), all three variables lost their significance and only HDI showed relevance. Additionally, in Model 12, HDI was combined again with those variables except for PDI, and HDI still turned out to be the only one relevant, with a confidence level of 99%.

As HDI turned out to be relevant both when considered alone and every time it was combined with other variables, in Table 3 all Models focus on further combinations of it with other two variables. Moreover, the focus was also on Indulgence (IVR) in order to test its relevance combined with HDI and other variables. As can be seen, in all Models 13–17, HDI is always relevant and negative (positive effect on the gender gap) with a confidence level of 99% and 95%. IVR is also relevant in all Models except for Model 13, where the third variable is LTO. In particular, it has a confidence level of 90% and it is positive (i.e., it has a negative effect on the gender gap), thus the more indulgent a society is, the higher gender gap in entrepreneurship is. In fact, this result does not correspond to what one might expect since indulgent societies do not have strict social norms. However, of the Models in Table 3, none can be considered relevant, as only two variables out of three are significant. Nevertheless, it was useful to consider those Models as a basis for further estimations and observations on the same relevant variables in different Models.

Table 3
Multilevel Linear Regression, Focus on IVR and HDI

Variables	Model 13	Model 14	Model 15	Model 16	Model 17
Constant	1.787 (.000)***	1.880 (.000)***	1.666 (.000)***	1.757 (.000)***	1.603 (.000)***
PDI	–	–	.000 (.688)	–	–
IDV	–	–	–	–	-.001 (.188)
MAS	–	–	–	.000 (.692)	–
UAI	–	-.001 (.228)	–	–	–
LTO	.000 (.932)	–	–	–	–
IVR	.002 (.113)	.002 (.067)*	.002 (.060)*	.002 (.060)*	.002 (.071)*
HDI	-1.467 (.000)***	-1.456 (.000)***	-1.359 (.001)***	-1.444 (.000)***	-1.130 (.005)**
R-squared	.332	.351	.335	.334	.355

Note. * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$

In Table 4, all Models focus on the combination of almost all variables with Individualism this time. As can be observed, IDV is always relevant with a confidence level of 95 or 90% except for Model 22, where it is combined with HDI, which is in turn relevant and has a confidence level of 95%. In all cases, the effect of IDV on the gender gap is positive (similarly as in previous models) and with the same level. This means that the constant of Individualism, as HDI, is negative, meaning that the more individualist a society is, the less gender gap in entrepreneurship there is. Furthermore, Model 20 and 21 show that UAI and LTO are also relevant and negative as in other Models in Table 1 and Table 2. However, the same two variables did not turn out to be relevant in Table 3, whereby LTO is also positive as opposed to the other previously mentioned Models.

Table 4
Multilevel Linear Regression, Focus on IDV

Variables	Model 18	Model 19	Model 20	Model 21	Model 22
Constant	.809 (.000)***	.665 (.000)***	.934 (.000)***	.867 (.000)***	1.754 (.000)***
PDI	.000 (.594)	.001 (.393)	.001 (.427)	.001 (.438)	-.000 (.641)
IDV	-.003 (.011)**	-.003 (.019)**	-.003 (.008)*	-.003 (.029)**	-.002 (.129)
MAS	–	–	–	–	–
UAI	–	–	-.002 (.057)*	–	–
LTO	–	–	–	-.002 (.083)*	–
IVR	–	.002 (.154)	–	–	–
HDI	–	–	–	–	-1.09 (.012)**
R-squared	.224	.255	.278	.269	.315

Note. * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$

For this reason, Table 5 shows the last five Models, which are a final attempt of combination of variables that were repetitively relevant in the previous Models in order to see whether they keep their relevance among themselves. In particular, the relevance of LTO was mainly tested this time, as the relevance of the other variables had already been tested enough in the previous models. Model 23 is the most relevant in this group as all three variables put together, i.e., Long-Term Orientation, Uncertainty Avoidance and Individualism are all significant, with a confidence level of 90% for the former two and of 99% for the latter. Model 24 is not relevant as only Individualism shows significance at 99%, as well as Model 25, where only HDI is relevant. Model 26 shows that Power Distance loses its significance when combined with LTO, UAI and IDV, which are the relevant variables of Model 23. Lastly, Model 27 has the same significant variables as Model 26 plus HDI. It is the only model where two variables combined with HDI are relevant. In addition, in this case LTO loses significance.

Table 5
Multilevel Linear Regression, Focus on LTO

Variables	Model 23	Model 24	Model 25	Model 26	Model 27
Constant	1.132 (.000)***	.918 (.000)***	1.607 (.000)***	1.005 (.000)***	1.690 (.000)***
PDI	–	–	–	.001 (.277)	–
IDV	-.004 (.000)***	-.004 (.001)***	-.002 (.136)**	-.003 (.022)**	-.002 (.069)*
MAS	–	–	–	–	–
UAI	-.0021 (.051)*	–	–	-.002 (.038)**	-.001 (.079)*
LTO	-.002 (.073)*	-.001 (.252)	-.001 (.262)	-.002 (.054)*	-.001 (.200)
IVR	–	.000 (.644)	–	–	–
HDI	–	–	-.903 (0.027)**	–	-.818 (.041)**
R-squared	.314	.263	.329	.330	.369

Note. * $p \leq .1$, ** $p \leq .05$, *** $p \leq .01$

Finally, every variable was tested a total of 14 times except for Masculinity, which was tested only 11 times as it never turned out to be relevant⁵. In fact, Hypothesis H6 is not rejected, which means that MAS cannot be considered significant in affecting gender gap in entrepreneurship, as already proven by Rubio-Bañón and Esteban-Lloret (2016). On the contrary, it can be observed that HDI is always significant and always has a positive effect on the gender gap (it turned out to be relevant in all 14 estimations), meaning that the *more developed* a society is, the *lower* the gap is. For this reason, Hypothesis H7 along with results provided by Rubio-Bañón and Esteban-Lloret (2016) can be rejected. For what concerns IVR, it turned out to be significant 5 times out of 14 and it was always positive, meaning that the *more indulgent* a society is (i.e., the less strict it is in terms of social norms and personal gratification), the *higher* the gender gap. This result does not correspond to the expectations; therefore, Hypothesis H5 is rejected. However, this variable did not turn out to be relevant many times and it only did when it was combined with HDI.

As for the variables of the most significant Models (10, 23, 26 and 27):

- IDV was often relevant (11 times out of 14) and always negative, meaning that the *more individualistic* a society is, the *lower* the gender gap. Additionally, it turned out to be relevant in three of the above-mentioned Models (23, 26 and 27), therefore Hypothesis H1 is not rejected;
- LTO turned out to be relevant various times (6 out of 14) and it was always negative, meaning that the *more flexible and pragmatic* a society is in terms of

⁵ Not all estimations are included in the Tables as the aim of some of them was to further test the relevance of singular variables. As tested variables showed repeatedly the same behaviour, no more than 14 estimations were run. Only Models that were significant for the explanation of the gender gap are presented in the Results.

societal change, the *lower* the gender gap. In addition, it was present in three relevant Models out of four, therefore Hypothesis H4 is not rejected;

- UAI was relevant 6 times out of 14 and in all four relevant Models. Additionally, it was always negative, meaning that the *more risk-adverse* a society is about the future, the *lower* the gender gap is: therefore, Hypothesis H3 is not rejected;
- each time PDI was relevant (4 out of 14), it was also positive, meaning that the *more hierarchical* a society is, the *higher* the gender gap, which makes sense in theory. However, it only turned out to be relevant a few times and only in one significant Model (10). For the above-mentioned reasons, Hypothesis H2 is not rejected. In fact, as discussed in the previous section, Kusterer (2014) and data from OECD (2016a) already confirmed that even societies with low degrees of PDI still show considerable levels of gender gap in entrepreneurship, which justifies the low rate of relevance of positive PDI in the Models presented above.

To conclude, if taken singularly, *Human Development* and *Individualism* are the variables with the highest rate of relevance among all that have a positive effect on gender gap, followed by Long-Term Orientation, Uncertainty Avoidance and Indulgence. However, as proven by Model 23 and 26, it seems that the combination of high rates of *Individualism*, *Long-Term Orientation* and *Uncertainty Avoidance* is particularly relevant in decreasing gender gap in entrepreneurship. This would mean that rather *individualistic*, *pragmatic* and *flexible* societies in terms of societal change, which at the same time are *averse to risk and uncertainty* related to the future, tend to have a lower rate of gender gap in entrepreneurship.

Discussion

Comparison with other studies

Dheer, Li and Treviño (2019) adopted an integrative approach to the analysis of gender gap in the likelihood of starting business ventures, which gave the possibility to have a very articulate view on the matter. The focus of this paper instead is more specific as it is concerned with the cultural attributes and development conditions determining a lower level of gender entrepreneurial breach in a country.

As for the independent variables used, among many others Dheer, Li and Treviño (2019) included Hofstede's Masculinity index. As already suggested by Cardozo Crowe (2010), they observed that a high level of Masculinity seems to influence gender gap in a positive way, in the sense that the more masculine a society is, the less gender gap in entrepreneurship there is. In fact, the idea is that in such countries women are impregnated over masculine values (e.g., achievement, heroism, assertiveness, material rewards for success), which lead them to be more prone to engage in entrepreneurial ventures. In particular, their results show that when a country has a higher masculinity index, women are only 1% less likely than men to start a business as opposed to a 3% in countries with a lower masculinity index (Dheer, Li, & Treviño, 2019). However, they analyzed a total of 45 countries, while in this paper a sample of 55 was taken into consideration.

Data analysed in this paper show that Masculinity is not relevant in affecting gender gap, which was proven by Rubio-Bañón and Esteban-Lloret (2016) as well. In fact, the authors grouped the same 55 countries analysed in this paper depending on their level of Masculinity by using Hofstede's classification (feminine, moderately feminine, moderately masculine, masculine) and for each group, they compared the MAS index with the level of gender gap. They observed that there existed inconsistencies inside the same groups and among groups. For example, in the group of feminine countries (i.e., with very low MAS), Norway, which is the second-most feminine country of all (MAS = 8), has the highest level of gender gap in entrepreneurship (0.59). Conversely, certain moderately female countries (i.e., with a higher level of masculinity) such as Brazil (MAS = 49) showed lower levels of gender gap (−0.01). However, Iran, which is a moderately feminine country like Brazil (MAS = 43), showed a higher gender gap (0.64), and so on. In addition, the authors took into consideration the countries' level of economic development taken by GEM's classification (Global Entrepreneurship Monitor, 2013), which they deemed irrelevant in affecting gender gap as well. However, they were only taking into account the combination of it with the MAS index and did not use linear regression to analyse interactions between the variables.

Moreover, according to data collected by GEM (2019a), only six countries of the 48 surveyed show equal TEA rates between men and women, i.e., Indonesia, Thailand, Panama, Qatar, Madagascar and Angola. These countries span all three income levels (low income, middle income, high income) following a classification made by the World Economic Forum (Schwab, 2018). Indonesia, Madagascar and Angola are *low-income*, Panama and Qatar are *high-income* and Thailand is *middle-income*. Of the above-mentioned countries, Indonesia, Thailand and Panama were also present in the sample of countries used for this paper. In fact, the three countries are the ones with the lowest gender gap in the list, after Vietnam, Philippines and Ecuador. However, data for the latter three countries are from 2015 and 2017, while data for Indonesia, Thailand and Panama are from 2018. For this reason, it can be worthwhile to further analyze data for Indonesia, Thailand and Panama according to the results obtained in this paper in terms of socio-cultural and development conditions determining a low gender gap. For what concerns United Nations's HDI (2018a), Indonesia has a *medium human development* (0.69), while Thailand and Panama have a *high human development* (0.75 and 0.78). In terms of UAI, LTO and IDV, they all show low rates of Individualism (20, 14, 11), while they have high rates of Uncertainty Avoidance (64, 48, 86) and relatively high rates of Long-Term Orientation (32, 62, 45). Therefore, they do not exactly correspond to Models 23 and 26 and they do not have the highest level of HDI either (i.e., *very high*).

On the other hand, by filtering countries according to Models 23 and 26 and to results obtained for HDI (i.e., with intermediate/high levels of UAI, LTO and IDV, very high HDI and low level of gender gap), *Spain* and *France* seem to have the best attributes among all 55. In the case of Spain, IDV and UAI are high while LTO is intermediate (51, 86, 48), HDI is very high (0.891) and gender gap is low (0.11). As for

France, IDV, UAI and LTO are all high (71, 86, 63), HDI is very high (0.901) and gender gap is low (0.25)⁶.

As for Spain's LTO, as explained by (Hofstede, n.d.-c), it means that Spain is a rather normative culture (vs. the pragmatic kind), where people prefer clear structures and well-defined rules to deal with society, therefore seeing societal change with suspicion. However, according to recent studies (Chislett, 2018) and socio-political observations (The difference between Italy and Spain, 2019), Spain is a kind of society that has demonstrated openness to and great capability of social change. In fact, as observed by Chislett (2018), in comparison with 1978, Spain is "a new world" socially speaking. For instance, the condition of women has improved considerably, so much so that today there are more Spanish women than men at universities (and their academic results are better). Additionally, the female labour force participation rose from 20% to 53% since 1978, and 11 of the 17 Ministers in the current government (2019) are women, which is the largest number in Spain's history and the highest proportion in the world. Furthermore, while Euroscepticism, xenophobia and far-right movements and parties are taking over many European countries (e.g., Italy, UK, France and Germany) mainly due to the big influx of immigrants, Spain represents an exception. In fact, 68% of Spaniards still think the European membership is a good thing (European Parliament, 2018). Moreover, Spain is also the only country in Europe that has no Eurosceptic parties' representation in the European Parliament (Special report on Spain, 2018). Finally, there are no French-style banlieues or US-style ghettos in Spain; in fact, Spaniards are first in the ranking of social openness towards immigrants (Chislett, 2018; Special report on Spain, 2018). For these reasons, Spain might be a normative country, but it also shows social openness, which is in line with the results obtained in terms of attributes decreasing gender gap, and also with the rate of LTO, which is, in fact, intermediate.

Limitations

The aim of this paper was to compare results with the ones from Rubio-Bañón and Esteban-Lloret (2016). However, in terms of countries' development, the mentioned authors referred to the classification used by Global Entrepreneurship Monitor (Global Entrepreneurship Monitor, 2013), which identifies three main phases of economic development based on GDP per capita and the share of exports comprising primary goods (Global Entrepreneurship Monitor, 2013)⁷. On the other hand, for this paper the Human Development Index was used, as it does not only measure a country's development from an economic perspective but also from a human one, which can have an impact on the issue of gender gap in entrepreneurship as well. In fact, the HDI

⁶ The cut-off levels were >45 for IDV, UAI and LTO as that level is considered intermediate, while from 50 upward it is high (Hofstede, n.d.-b). >80 for HDI, which means very high (United Nations, 2018a). ≤0.25 for gender gap in entrepreneurship, which can be considered low as France is 18th among 48 countries based on the level of gender gap, while Spain is 8th (Global Entrepreneurship Monitor, 2019a).

⁷ Depending on their development phase, GEM classifies economies as "factor-driven" or in stage 1; "efficiency-driven" or in stage 2; "innovation-driven" or in stage 3 (Global Entrepreneurship Monitor, 2013; Porter, Sachs & McArthur, 2002; Schwab, 2018).

includes measures of life expectancy, education of the population and Gross National Income (GNI) per capita (United Nations, 2018a).

In addition, while the sample of countries used by Global Entrepreneurship Monitor in 2013 includes all income levels (i.e., the sample used by the above-mentioned authors), the countries analysed in this paper includes the *medium*, *high* and *very high level* of HDI, excluding the *low level*. For this reason, the results about HDI cannot be considered completely accurate. Nevertheless, the identified countries showing the best attributes decreasing gender gap have a *very high* HDI, confirming the results showing that the higher the HDI, the lower the gender gap.

Finally, since data related to such variables as LTO, IVR and HDI were missing for six countries in the first two cases and for two countries in the second, they had to be calculated by using the correlation coefficient with a cut-off level of 0.70. As for the gender gap variable, data were collected from reports of various years down to 2013, as not every country included in the analysis was taken into consideration in the last GEM's report available (Global Entrepreneurship Monitor, 2019a). Nevertheless, only 18 countries' data (i.e., of Belgium, Czech Republic, Ecuador, Estonia, Finland, Jamaica, Latvia, Lithuania, Malaysia, Mexico, Norway, Philippines, Portugal, Romania, Singapore, Suriname, Trinidad & Tobago, Vietnam) had to be retrieved from previous years and the majority of them date back to 2015.

Conclusion

As mentioned in the Introduction, there are several kinds of factors determining the phenomenon of gender gap in entrepreneurship. This study highlights certain drivers of social, cultural and economic kind, which seem to decrease the gender gap, therefore it can be used as a cue for further and more extended research. In particular, it can be interesting to monitor the two countries identified, i.e., Spain and France, in order to see whether their gender entrepreneurial breach decreases in the next years.

Moreover, future research could focus on specific geographical regions, e.g., Europe and North America or Latin America and the Caribbean. The analysis could also be narrowed down to such variables as education and GNI, which are part of the Human Development Index that was used for this study. In addition, this research work only analysed early-stage entrepreneurship, thus future research could focus on the next stages by evaluating the performance and success of businesses run by women in comparison with those run by men.

Finally, as discussed in the Introduction, according to GEM's study (Global Entrepreneurship Monitor, 2019a), gender gap in entrepreneurship seems to be more prominent in developed countries than in developing ones as in developing economies women tend to turn to entrepreneurship as a way out of unemployment or poverty (Minniti & Naudé, 2010). In fact, this kind of entrepreneurship is defined as "necessity entrepreneurship". However, data obtained for this study show that the more developed a country is, the lower the gender gap. For this reason, future research could further investigate necessity entrepreneurship at the international level, analyse

what factors determine it, and when such factors actually affect gender gap. In the case of Italy, for instance, despite the current bad economic conditions and the high rate of unemployment, the share of necessity entrepreneurship is very low thanks to its generous welfare system (Global Entrepreneurship Monitor, 2019a). Therefore, the distinction between female entrepreneurship and female necessity entrepreneurship related to a country's economic conditions should be stressed when comparing gender gap across countries.

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